OMB Number: 2030-0020 Expiration Date: 06/30/2024

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note: Read Instructions before completing form.

I. A.	Applican	t/Recipient (Name, Address, C	ity, State, Zip Co	de)			
	Name:	Asthma and Allergy Four					
	Address:	26111 W 14 Mile Rd Ste	LL1				
	City:	Franklin					
	State:	MI: Michigan			Zip Code : 48205-1169		
					L		
В.	DUNS N	860965433					
II.	Is the ap	plicant currently receiving EP	A Assistance?	Yes No			
Ш.				nts pending against the applic not include employment comp			
Not	Applical		- uisusinty. (DO	not molade employment comp	numes not covered by 40		
IV.	discrimi	nation based on race, color, na	ational origin, sex	nts decided against the applic x, age, or disability and enclos complaints not covered by 40	se a copy of all decisions		
Not	Applical	ole					
V .	of the re			recipient conducted by any ag based on the review. Please o			close a copy
Not	Applical	ole					
VI.	Is the ap	plicant requesting EPA assista		struction? If no, proceed to V	'll; if yes, answer (a) and	or (b) below.	
		Yes	⊠ N	0			
a.				s or alterations to existing faci If yes, proceed to VII; if no, pro		onstructed to b	e readily
		Yes	N	0			
b				es or alterations to existing fac xception (40 C.F.R. 7.70) appli		accessible to	and usable
VII.				ing notice that it does not disc ts program or activities? (40 0		X Yes	No
a.	Do the m	ethods of notice accommodal	te those with imp	aired vision or hearing?		X Yes	No
b		tice posted in a prominent pla ities, in appropriate periodica	• • •	nt's offices or facilities or, for ten communications?	education programs	X Yes	No
C.	. Does the	notice identify a designated of	civil rights coordi	inator?		Yes	No No
VIII.		applicant/recipient maintain of of the population it serves?	~ .	a on the race, color, national o	origin, sex, age, or	X Yes	No
IX.		applicant/recipient have a pol nglish proficiency? (40 C.F.R.		r providing access to services	s for persons with	X Yes	No

X.		ctivity, or has 15 or more employees, has it des ovide the name, title, position, mailing address,	
Not	Applicable		
XI.		ctivity, or has 15 or more employees, has it ado allege a violation of 40 C.F.R. Parts 5 and 7? F	
Not	Applicable		
		For the Applicant/Recipient	
kn wit	owingly false or misleading statement may be pun th all applicable civil rights statutes and EPA regul		icable law. I assure that I will fully comply
A. Signature of Authorized Official Jennifer Shockling		B. Title of Authorized Official Executive Director	C. Date 03/25/2022
	Fo	r the U.S. Environmental Protection Agency	
co	mpliance information required by 40 C.F.R. Parts	icant/recipient and hereby certify that the applicant 5 and 7; that based on the information submitted, t pplicant has given assurance that it will fully compl	his application satisfies the preaward
A.	*Signature of Authorized EPA Official	B. Title of Authorized Official	C. Date

* See Instructions

Instructions for EPA FORM 4700-4 (Rev. 06/2014)

General. Recipients of Federal financial assistance from the U.S. Environmental Protection Agency must comply with the following statutes and regulations.

Title VI of the Civil Rights Acts of 1964 provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The Act goes on to explain that the statute shall not be construed to authorize action with respect to any employment practice of any employer, employment agency, or labor organization (except where the primary objective of the Federal financial assistance is to provide employment). Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act provides that no person in the United States shall on the ground of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under the Federal Water Pollution Control Act, as amended. Employment discrimination on the basis of sex is prohibited in all such programs or activities. Section 504 of the Rehabilitation Act of 1973 provides that no otherwise qualified individual with a disability in the United States shall solely by reason of disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Employment discrimination on the basis of disability is prohibited in all such programs or activities. The Age Discrimination Act of 1975 provides that no person on the basis of age shall be excluded from participation under any program or activity receiving Federal financial assistance. Employment discrimination is not covered. Age discrimination in employment is prohibited by the Age Discrimination in Employment Act administered by the Equal Employment Opportunity Commission. Title IX of the Education Amendments of 1972 provides that no person in the United States on the basis of sex shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Employment discrimination on the basis of sex is prohibited in all such education programs or activities. Note: an education program or activity is not limited to only those conducted by a formal institution. 40 C.F.R. Part 5 implements Title IX of the Education Amendments of 1972. 40 C.F.R. Part 7 implements Title VI of the Civil Rights Act of 1964, Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act, and Section 504 of The Rehabilitation Act of 1973. The Executive Order 13166 (E.O. 13166) entitled; "Improving Access to Services for Persons with Limited English Proficiency" requires Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

Items "Applicant" means any entity that files an application or unsolicited proposal or otherwise requests EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Recipient" means any entity, other than applicant, which will actually receive EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Civil rights lawsuits and administrative complaints" means any lawsuit or administrative complaint alleging discrimination on the basis of race, color, national origin, sex, age, or disability pending or decided against the applicant and/or entity which actually benefits from the grant, but excluding employment complaints not covered by 40 C.F.R. Parts 5 and 7. For example, if a city is the named applicant but the grant will actually benefit the Department of Sewage, civil rights lawsuits involving both the city and the Department of Sewage should be listed. "Civil rights compliance review" means any review assessing the applicant's and/or recipient's compliance with laws prohibiting discrimination on the basis of race, color, national origin, sex, age, or disability. Submit this form with the original and required copies of applications, requests for extensions, requests for increase of funds, etc. Updates of information are all that are required after the initial application submission. If any item is not relevant to the project for which assistance is requested, write "NA" for "Not Applicable." In the event applicant is uncertain about how to answer any questions, EPA program officials should be contacted for clarification. * Note: Signature appears in the Approval Section of the EPA Comprehensive Administrative Review For Grants/Cooperative Agreements & Continuation/Supplemental Awards form.

* Mandatory Other Attachment Filename: | 1234-AAFA-MI Enhanced AQ Quality Assurance Stateme

A Committee of the Committee of

Delete Mandatory Other Attachment

View Mandatory Other Attachment

To add more "Other Attachment" attachments, please use the attachment buttons below.

Add Optional Other Attachment

Delete Optional Other Attachment

View Optional Other Attachment

* Mandatory Project Narrative File Filename: | 1242-AAFA MI Enhanced AQ Project Narrative.pdf

Delete Mandatory Project Narrative File

View Mandatory Project Narrative File

To add more Project Narrative File attachments, please use the attachment buttons below.

Add Optional Project Narrative File

Delete Optional Project Narrative File

View Optional Project Narrative File



EPA KEY CONTACTS FORM

OMB Number: 2030-0020 Expiration Date: 06/30/2024

Authorized Representative: Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.

Name: Pro	efix:		First Name:	Kathleen			Mi	ddle Name: [
La	st Name:	Slonager						Suffix:		
Title: Ex	ecutive	Director								
Complete /	Complete Address:									
Street1:	Street1: 26111 W 14 Mile Rd									
Street2: Ste LL1										
City:	Frankl	in.			State:	MI: Michigan				
Zip / Post	tal Code:	48025-1169			Country:	USA: UNITED S	STATES			
Phone Nun	nber:	(888) 444-0)333			Fax Number:				
E-mail Add	lress:	aafamich@sk	ocglobal.net			***************************************				
Payee: Ind	ividual au	thorized to a	ccept payment	s.						
Name: Pro	efix:		First Name:	Kathleen			Mi	ddle Name: [
La	st Name:	Slonager						Suffix:		
Title: E2	kecutive	Director								
Complete /	Address:									
Street1:	26111	W 14 Mile H	Rd							
Street2:	Ste LI	1								
City:	Frankl	in			State:	MI: Michigan				
Zip / Post	tal Code:	48025-1169			Country:	USA: UNITED S	STATES			
Phone Nun	nber:	(888) 444-0333		Fax Number:						
E-mail Add	lress:	aafamich@sk	ocglobal.net							
		ntact: Indivi udgeting req		nsored Prog	grams Offic	ce to contact cond	cerning	administrativ	ve matters (i.e., i	ndirect cost
Name: Pro	efix:		First Name:				Mi	ddle Name:		
La	st Name:							Suffix:		
Title:										
Complete /	Address:									
Street1:										
Street2:										
City:					State:					
Zip / Post					Country:					
Phone Nun						Fax Number:				
E-mail Add	-mail Address:									

EPA Form 5700-54 (Rev 4-02)

EPA KEY CONTACTS FORM

Project Manager: Individual responsible for the technical completion of the proposed work.

Name:	Prefix:	First Name:	Lyke		Middle Name:		
	Last Name:	Thompson			Suffix:	Ph.D.	
Title:	Director						
Comple	te Address:						
Stree	t1: 5700 C	ass Ave, 2207 A/AB					
Stree	t2:						
City:	Detroi	t	State:	MI: Michigan			
Zip / I	Postal Code:	48202-4050	Country	USA: UNITED STATE	IS		
Phone I	Number:	(313) 577-5209		Fax Number:			
E-mail A	Address:	lyke@wayne.edu					

EPA Form 5700-54 (Rev 4-02)

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006 Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or	Catalog of Federal Domestic Assistance	Estimated Unob	ligated Funds		New or Revised Budget	
Activity (a)	Number (b)	Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Detroit Vulnerable Community Enhanced		\$	\$	\$ 157,308.00		\$ 157,308.00
Air Quality Network						
2.						
3.						
4.						
5. Totals		\$	\$	\$ 157,308.00	\$	\$ 157,308.00

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SECTION B - BUDGET CATEGORIES

6. Object Class Categories		GRANT PROGRAM,	FUNCTION OR ACTIVITY	Total
	Detroit Vulnerable Community Enhanced Air Quality Network		(3)	(5)
a. Personnel	\$ 36,900.00	\$	\$	\$ \$ 36,900.00
b. Fringe Benefits	369.00			369.00
c. Travel	725.00			725.00
d. Equipment	0.00			0.00
e. Supplies	0.00			0.00
f. Contractual	0.00			0.00
g. Construction	0.00			0.00
h. Other	115,514.00			115,514.00
i. Total Direct Charges (sum of 6a-6h)	153,508.00			\$ 153,508.00
j. Indirect Charges	3,800.00			\$ 3,800.00
k. TOTALS (sum of 6i and 6j)	\$ 157,308.00	\$]\$	\$ \$ 157,308.00
7. Program Income	\$	\$] s	\$ \$

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	SECTION C - NON-FEDERAL RESOURCES									
(a) Grant Program				(b) Applicant	(b) Applicant			(d) Other Sources	(e)TOTALS	
8.	Detroit Vulnerable Community Enhanced Air Qu	ality Network	\$		\$		\$		\$ [
9.										
10.										
11.										
12.	TOTAL (sum of lines 8-11)		\$		\$		\$		\$	
		SECTION	D -	FORECASTED CASH	NE	EDS	-11		·	
		Total for 1st Year		1st Quarter		2nd Quarter		3rd Quarter	_	4th Quarter
13.	Federal	\$ 89,889.00	\$	40,405.00	\$	16,495.00	\$	16,495.00	\$	16,494.00
14.	Non-Federal	\$								
15.	TOTAL (sum of lines 13 and 14)	\$ 89,889.00	\$	40,405.00	\$	16,495.00	\$	16,495.00	\$	16,494.00
	SECTION E - BUD	GET ESTIMATES OF FE	DE	RAL FUNDS NEEDED	FO	R BALANCE OF THE	PF	ROJECT		
	(a) Grant Program		_			FUTURE FUNDING	PE			
			+-	(b)First	. .	(c) Second	_	(d) Third		(e) Fourth
16.	Detroit Vulnerable Community Enhanced Air Qu	ality Network	\$		\$	67,419.00	\$		\$[
17.										
18.										
19.										
20. TOTAL (sum of lines 16 - 19)					\$	67,419.00	\$		\$	
	SECTION F - OTHER BUDGET INFORMATION									
21.	Direct Charges: 153,509.00			22. Indirect	Cha	arges: 3,799.00				
23. I	3. Remarks:									

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Standard Form 424A (Rev. 7- 97) Prescribed by OMB (Circular A -102) Page 2

OMB Number: 4040-0004 Expiration Date: 12/31/2022

Application for Federal Assistance SF-424								
* 1. Type of Submission: Preapplication Application Changed/Corrected Application	New	If Revision, select appropriate letter(s): Other (Specify):						
* 3. Date Received: 03/25/2022	4. Applicant Identifier:							
5a. Federal Entity Identifier: 5b. Federal Award Identifier:								
State Use Only:								
6. Date Received by State:	7. State Application Id	dentifier:						
8. APPLICANT INFORMATION:								
*a.Legal Name: Asthma & Aller	gy Foundation of Americ	ca Michigan Chapter						
* b. Employer/Taxpayer Identification Nu	mber (EIN/TIN):	* c. Organizational DUNS: 8609654330000						
d. Address:		•						
* Street1: 26111 W 14 M: Street2: * City: Franklin County/Parish: * State: MI: Michigan Province: * Country: USA: UNITED S	ile Road Ste LL1							
* Zip / Postal Code: 48025 - 1169								
e. Organizational Unit:								
Department Name:		Division Name:						
f. Name and contact information of p	person to be contacted on ma	atters involving this application:						
Prefix: Middle Name: * Last Name: Suffix: Suffix:	* First Name:	: Kathleen						
Title: Executive Director	Title: Executive Director							
Organizational Affiliation:								
* Telephone Number: 2484044254		Fax Number:						
*Email: aafamich@sbcglobal.net								

Application for Federal Assistance SF-424
* 9. Type of Applicant 1: Select Applicant Type:
M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)
Type of Applicant 2: Select Applicant Type:
Type of Applicant 3: Select Applicant Type:
* Other (specify):
* 10. Name of Federal Agency:
Environmental Protection Agency
11. Catalog of Federal Domestic Assistance Number:
66.034
CFDA Title:
Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities Relating to the Clean Air Act
* 12. Funding Opportunity Number:
EPA-OAR-OAQPS-22-01
* Title:
Enhanced Air Quality Monitoring for Communities
13. Competition Identification Number:
Title:
14. Areas Affected by Project (Cities, Counties, States, etc.):
1240-AAFA MI Enhanced AQ Areas Served.pdf Add Attachment Delete Attachment View Attachment
* 15. Descriptive Title of Applicant's Project:
Detroit Vulnerable Community Enhanced Air Quality Network
Attach supporting documents as specified in agency instructions.
Add Attachments Delate Attachments View Attachments

Application for Federal Assistance SF-424									
16. Congressional Districts Of:									
* a. Applicant	* a. Applicant MI-09 * b. Program/Project MI-13								
Attach an additional list of Program/Project Congressional Districts if needed.									
1241-AAFA M	1241-AAFA MI Enhanced AQ Congressional Dis Add Attachment Delete Attachment View Attachment								
17. Proposed P	roject:								
* a. Start Date:	* a. Start Date: 11/01/2022 * b. End Date: 10/31/2024								
18. Estimated Funding (\$):									
* a. Federal		157,308.00							
* b. Applicant		0.00							
* c. State		0.00							
* d. Local		0.00							
* e. Other		0.00							
* f. Program Inc	ome	0.00							
* g. TOTAL		157,308.00							
* 19. Is Applica	tion Subject to Review B	y State Under Executive Order 12372 Process?							
a. This app	lication was made availat	ole to the State under the Executive Order 12372 Process for review on							
b. Program	is subject to E.O. 12372	but has not been selected by the State for review.							
C. Program	is not covered by E.O. 12	2372.							
* 20. Is the App	licant Delinquent On An	y Federal Debt? (If "Yes," provide explanation in attachment.)							
Yes	No No								
If "Yes", provid-	e explanation and attach								
	·	Add Altachment Delete Altachment View Altachment							
21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001) ** I AGREE ** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.									
Authorized Rep	oresentative:								
Prefix:		* First Name: Kathleen							
Middle Name:	Middle Name:								
* Last Name:	Slonager RN, AE-C,	ССН							
Suffix:									
* Title:	*Title: Executive Director								
* Telephone Number: (888) 444-0333 Fax Number:									
*Email: aafamich@sbcgloabl.net									
* Signature of Authorized Representative: Jennifer Shockling * Date Signed: 03/25/2022									



CENTER FOR URBAN STUDIES

March 20, 2022

Kathleen Slonager, RN, AE-C, CCH
Executive Director
Asthma and Allergy Foundation of America – Michigan Chapter
26111 W 14 Mile Rd, Ste LL1
Franklin, MI, 48025-1169

RE: EPA-OAR-OAQPS-22-01 proposal Detroit Vulnerable Community Enhanced Air Quality Network

Dear Kathleen Slonager,

On behalf of Wayne State University Center for Urban Studies (Center), I offer this letter as demonstration of our proposed partnership on the project entitled, *Detroit Vulnerable Community Enhanced Air Quality Network*, in response to EPA's Enhanced Air Quality Monitoring for Communities RFA EPA-OAR-OAQPA-22-01.

Since 1967, the Center's mission has been to understand and provide innovative responses to urban challenges and opportunities such as PM2.5 and disproportionate human health impacts Detroit and other communities. We value our ongoing partnership with AAFA-MI on our existing Detroit Older Adult Home Safety Assessment project, and are delightful to have this opportunity to potentially include commercially available air quality PM2.5 sensors in the community for their ability to assist in the identification of PM2.5 and to enable the community to actively participate in monitoring their own AQ data. Our organizations have a shared interest in improving awareness around this important public health hazard, and it is for these mutual goals that we look forward to collaboration on the proposed project.

The proposed project seeks to enhance and expand the available community network of AQ PM2.5 monitors, a pollutant of concern linked with negative respiratory health and COVID-19 outcomes that greatly impact vulnerable older residents of Detroit with respiratory distress/asthma symptoms. We recognize that asthma and allergic disorders can be devastating health problems that affect over 76 million Americans, and that Detroiters in particular, have an extraordinarily high asthma incidence rate. Through this project, we can work in partnership to better identify and relay to the community PM2.5 concentrations in their homes and community, hope to alleviate some of the health disparities, and help to empower the community's voice on PM2.5 matters through education and Citizen Science activities.

We are committed to our collaboration with AAFA-MI and have assisted in the development of the Detroit Vulnerable Community Enhanced Air Quality Network project in partnership with AAFA-MI. The Center will provide partner support as outlined in the proposal, including but not limited to

- AmeriCorps Member sensor drop off and installation/activation, community engagement and education;
- Project staff support to develop FLOWII dashboard, text-alerts, provide community technical assistance, and collect/monitor data;
- Assist in the preparation of deidentified maps/products, reports, and presentations:
- Co-host quarterly workshops with AAFA-MI throughout the project period;
- Regular consulting and collaboration on project messaging; progress and success/challenges; and
- Helping to disseminate project findings to the community and partner networks.

I look forward to collaborating on the proposed project for its potential to improve our understanding of Detroit's PM2.5 concentrations and anticipate that this knowledge will be translated in additional community projects and help to inform policy. If you would like to contact me, please reach me by phone at (734) 620-2416 or by email lyke@wayne.edu.

Sincerely,

Lyke Thompson

Director, Center for Urban Studies

Wayne State University

Detroit, MI 48202

Internal Revenue Service

Date: January 26, 2007

ASTHMA & ALLERGY FOUNDATION OF AMERICA MICHIGAN CHAPTER % KATHLEEN SLONAGER 17520 W 12 MILE RD STE 102 SOUTHFIELD MI 48076-1943 279 Department of the Treasury P. O. Box 2508 Cincinnati, OH 45201

Person to Contact:

Cheryl Skaggs 31-04010 Correspondence Specialist/Screener

Toll Free Telephone Number:

877-829-5500

Federal Identification Number:

38-2534175

Group Exemption Number:

1462

Dear Sir or Madam:

This is in response to your request of January 26, 2007, regarding your organization's tax-exempt status

Your organization is exempt under section 501(c)(3) of the Code because it is included in a group ruling issued to Asthma & Allergy Foundation of America National, located in Washington, DC.

Our records indicate that contributions to your organization are deductible under section 170 of the Code, and that you are qualified to receive tax deductible bequests, devises, transfers or gifts under section 2055, 2106 or 2522 of the Internal Revenue Code.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely

Michele M. Sullivan, Oper. Mgr. Accounts Management Operations 1

Kathleen Felice Slonager, RN, DiHOM, ADS, AE-C, CCH

5643 Sunnycrest Drive · West Bloomfield, MI 48323 · 248.613.9662 kslonager@msn.com

BACKGROUND

Ms. Slonager is the Executive Director of Asthma and Allergy Foundation of America - Michigan Chapter - a non-profit organization whose mission is to educate, train and advocate for all those affected by asthma and allergies.

Ms. Slonager has over 25 years experience in the health care industry as an administrator, leader and practitioner. She is a Registered Nurse, Certified Asthma Educator, as well as a board-certified Classical Homeopath. She is a passionate patient advocate and health educator with expertise in disease management & wellness programs, quality assurance, policy & procedure development, and complementary and alternative medicine modalities.

CURRENT EXPERIENCE SUMMARY

Asthma & Allergy Foundation of America - Michigan Chapter - Executive Director: responsible for fulfilling the mission of this 501(c)(3) charity, whose mission is to educate and train all those affected by asthma and allergies, as well as the professionals that take care of them. In 2013, she was awarded the AAFA Chapter Innovation Award from the Asthma and Allergy Foundation of America, in recognition of a home care program for families. Additionally, she is the co-author of the AAFA Wee Breathers™ and the Asthma Care for Adults™ asthma management programs.

PAST EXPERIENCE SUMMARY

In all, over 25 years experience in complimentary & alternative medicine, health care management, quality improvement and patient care. Extensive experience developing programs in Disease Management and wellness programs. Expertise in program development for diverse populations including different ethnicities and cultures, groups and those affected by economic, social, and health disparities. Knowledgeable in community outreach programs throughout Michigan and for a Commercial, Medicaid and Medicare population. Other experience includes health promotions and wellness program development around heart disease, diabetes, asthma, maternal/child, and end-of-life/hospice care.

Health Administrative experience: quality assurance program design and implementation, facility operations, policy and procedure design and development, and human resources.

Ms. Slonager is also the author of several published papers and lectures regarding asthma education and holistic health practices, and homeopathy as well as co-author of a published study: *Impact of air pollution on asthma in Arab Americans*, 2014.

EMPLOYMENT HISTORY

1/05 to Present Executive Director, Asthma and Allergy Foundation of America -MI 12/03- 1/05 Manager, Disease Management Programs, Midwest Health Plan 7/00-3/02 Health Promotion Specialist - Supervisor, Great Lakes Health Plan 6/98-7/00 RN-Quality Management, University of Michigan Health Systems 2/00-6/00 Project Manager-HEDIS, Unival Corporation

4/98-6/98 RN Abstractor, Medstat, Inc.

1/97-2/98 Utilization Management Liaison, Premier Physicians Network

7/95-1/97 Bridge Liaison/Staff RN, Heartland Home Health & Hospice

1995-1996 Maternal/Child RN, Olsten-Kimberly Quality Care

1987-1990 Various Positions, Care Centers of Michigan

EDUCATION

2004 - 3 Year Diploma: Homeotherapeutics & Natural Health Sciences - Institute of Natural Health Sciences, Livonia, Michigan

1995 - Associate Degree in Science: Nursing - Henry Ford Community College, Dearborn, MI

1985 - Associate Degree in Liberal Arts - Henry Ford Community College

Present - Pursuing education & advanced degree through various programs

LICENSES & CERTIFICATIONS

Certification: 1982 Emergency Medical Technician

Certification: 1986 Reiki - Usui Shiki System

Certification: 1986 Hypnotherapy Certification: 1997 Case Management

Certification: 2001 Managed Healthcare: American Assoc. Health Plans Certification: 2003 National Acupuncture Detoxification Assoc. (AE-C)

Certification: 2006 Certified Asthma Educator (AE-C)

Certification: 2011 Classical Homeopath (CCH): Council for Homeopathic

Certification

License: 1995 - present Registered Nurse

PROFESSIONAL ASSOCIATIONS, COLLABORATIVES AND BOARD MEMBERSHIPS

- Homeopathic Nurses Organization Past President
- National Center for Homeopathy, Member
- World Homeopathic Awareness Organization, Michigan Coordinator
- · Metro Detroit Affiliated Homeopathic Study Group, Leader
- Michigan Holistic Nurses Association, Member
- Michigan Department of Community Health Asthma in Michigan Initiative, Collaborative Partner
- Michigan Allergy & Asthma Society, Board of Directors Partner
- · Detroit Asthma Coalition, Collaborative Partner
- Green & Healthy Homes Wayne County, Collaborative Partner
- · Ideomed (health & wellness apps innovator) Advisory Board Member
- Wayne State Center for Urban Responses to Environmental Stressors Advisory Board Member
- · Energy Foundation Consultant
- MI Air/MI Health Coalition Consulting Partner
- Halotherapy Solutions Consultant, VP of Consumer Education
- · Integrated Health Policy Consortium, Environment & Health Committee Consultant



AAFA-MI Annual Report 2021

26111 West 14 Mile, Suite LL1 • Franklin • MI • 48025 www.aafamich.org • aafamich@sbcglobal.net • 888.444.0333

Thank you to all those who have contributed time, support and funds – without you – we could not exist!

Our biggest donors this

year include:

Janz & Knight PLC:
Roy Michell Foundation

Keith A. Iverson Foundation

Energy Foundation

Each year, AAFA-MI works tirelessly to fulfill our mission to improve the quality of life for those affected by asthma and allergies through education, training and advocacy. 2021 proved to be a challenge but through innovative programing and perseverance, we prevailed.

We inspired thousands across Michigan to improve their health through our many programs, but this year focused on delivering these programs in virtual formats. This includes: Facebook Live presentations, workshops presented on video platforms and one-on-one discussions with our asthma educator. We also continued our focus to educate our Legislators on the importance of health first in all policy decisions.

Asthma and allergies (including food) are still one of the <u>most common</u> and <u>most costly</u> chronic diseases. These diseases affect more than 75 million Americans. This is more than diabetes, cancer, heart disease, stroke, Alzheimer's & Parkinson's *combined!* Asthma accounts for over 1.6 million annual emergency department visits. Food Allergies account for over 200 thousand ED visits. Asthma alone accounts for \$82 billion in yearly direct and indirect costs. Helping people get better control will save healthcare dollars and improve quality of life.

Michigan has close to a million people with asthma; about 25% are just kids! In fact, it's a big reason why children miss school, go to the emergency room, or are hospitalized. Total annual costs for asthma in Michigan exceed \$395 million - much of this is associated with out-of-control asthma. Which we work every day to help people get better control.

The good news is deaths from asthma are declining. And childhood asthma rates have leveled off. However, racial disparities still persist among the poorest families and asthma is far more common among African-American children than white children.

Thanks to our Executive Director, Board Members, and volunteers we are changing these startling facts for so many in Michigan through our quality programs, services and our passion to do what's best for those affected by asthma and allergies.



Counties with highest Asthma Rates:

Bay, Eaton, Genesee, Jackson, Kent, Macomb, Oakland, Saginaw, St. Clair, Washtenaw, & Wayne

- · 63,000 people miss school or work due to asthma
- 4,700 people visit the emergency room due to asthma
- · 82 people visit the emergency room due to food allergies
- · 10 people die from asthma
- median annual medical cost of asthma was \$983 in the U.S. This ranged from an average low of \$833 in Arizona to an average high of \$1,121 in Michigan

◀ Every Day in America

AAFA-MI is seeking dedicated volunteers. If you're interested, please contact our Executive Director

"You make a living by what you get, but you make a life by what you give." Winston Churchill



LANA HARDIN - PRESIDENT (RETIRED DETROIT PUBLIC SCHOOLS)

LAWRENCE PASIK, MD - VP MEDICAL AFFAIRS & PROGRAMS (RETIRED - PRIVATE PRACTICE)

AMANDA COY, SECRETARY (MISS LAKE MICHIGAN)

ELLIOTT ATTISHA, DO (DETROIT PUBLIC SCHOOLS)

LYNETTE SMITH, RN, BSN, CLC

HEATHER LOWRY, MSN, CNP (ASTRAZENECA)

CLYDE FLORY, MD (RETIRED)

KATHLEEN SLONAGER RN, AE-C, CCH

For Life Without Limits!

We are proud to have reached thousands with our programs and services provided. Here is a sampling:

Public Outreach

Over 3,000 individuals were reached through our involvement with virtual events and workshops, media appearances, workplace programs, lectures, and phone & website interactions

Professional Outreach

 326 Doctors, Nurses, Respiratory Therapists, and other professionals were educated and trained through our medical educational programs & consulting work

Legislative Outreach

Throughout the year, we had thoughtful conversations regarding asthma, allergies, air quality and renewable energy with over 20 state and federal Legislators and their staff

<u>Public Health, Non-profits & other Non-Governmental</u> Organizations

Training and consulting services given to over 400 individuals and organizations across Michigan

Collaborations, Coalitions & Progress

- AAFA-MI is an active participant on the Michigan Asthma Advisory Council (MAAC) a panel of asthma experts consulting with the state on policy, management, health disparities, and guidelines
- We are active with state-wide coalitions working on environmental and energy issues that result in cleaner air, water and land to improve conditions that will lead to less asthma
- Asthma & Allergy Friendly® Certification Program (assists consumers with choosing "friendly" products) AsthmaandAllergyFriendly.com
- Kids With Food Allergies, a patient organization with the largest online community for families is a division of AAFA. This is an exciting and important partnership which allows us to provide expertise to those affected by food allergies
- Our Facebook & Twitter get nearly 100,000 likes and are a great place to get the latest news, tips etc. Please visit and like our page at facebook.com/aafami or at twitter.com/aafami

For details on these or any of our programs and services - visit: www.aafamich.org

[&]quot;Thank you so much for the warm response! I will review everything you have sent which will help us get through this winter season healthier...." Grateful Mom

Quality Assurance Statement

We anticipate that upon funding award, we would develop a detailed Quality Assurance Plan in partnership with Wayne State University Center for Urban Studies project staff as required by the EPA. Commercially available air quality monitors proposed for the project are not FRM and data collected will be used for community education and awareness activities

Asthma and Allergy Foundation of America – Michigan Chapter (AAFA-MI) Executive Director Kathleen Slonager will maintain responsibility for the quality assurance (QA) and quality control aspects of the proposed project including partner subaward. Ms. Slonager holds authority over all final project decisions. Wayne State University Center for Urban Studies Director Dr. Lyke Thompson will maintain responsibility for the QA and QC of Center project staff and will consult with Ms. Slonager on all project aspects. Center project staff will maintain oversight of daily QC and QA field and data collection aspects of the project and will report QC and/or QA issues to project staff leadership. Project staff leadership will address QA/QC concerns and report to Dr. Lyke Thompson. Dr. Thompson will report QA/QC concerns directly to Ms. Slonager. Ms. Slonager will take corrective actions as needed to address QA/QC concerns.

Project objectives that will be used to evaluate success include:

- Use of commercially available sensors to identify PM2.5 concentrations in ambient air
 - Deployment of (31) PurpleAir Outdoor PM2.5 Monitors in each of the thirty-one zip codes of Detroit, Highland Park, and Hamtramck
 - # of monitors providing near real-time PM2.5 data on PurpleAir publicly accessible map
 - Deployment of (31) FLOWII personal/indoor PM2.5 Monitors paired with each of the Purple Air outdoor sensors within each of Detroit, Highland Park, and Hamtramck's thirty-one zip codes
 - o FLOWII Dashboard data interface developed
 - o # of monitors transmitting near real-time PM2.5 data to FLOW dashboard
- (31) Community members ages 60 and older engaged as Citizen Scientists
- Duration of time resident engages in monitoring activity
- # of participates at quarterly workshops
- Progress reports and a final report

Quality objectives that will be used to evaluate success include:

- # of days outdoor PurpleAir PM2.5 sensor is offline
- # of days indoor/outdoor FLOWII does not transmit data to dashboard

Collection of new/primary data:

The proposed commercially available air quality instrument sample ambient air and will report data collected to their respective sites (PurpleAir direct to public map and FLOW II to project created dashboard). Project partner Center for Urban Studies' project staff will follow university IRB approved protocols for community engagement during COVID-19 including use of personal protection equipment for staff/AmeriCorps members and residents engaged. PM2.5 data from paired indoor and outdoor monitors at residents' homes will be time stamped. The PurpleAir monitor provides fixed, continuous outdoor sampling and the FLOWII provides dynamic indoor/outdoor sampling while powered on by the user. Frequency of sampling will be developed with input from the community of concern in the project's early implementation phase.

Center project staff (Research Technicians) will perform data analysis under the direction and supervision of Dr. Lyke Thompson. In the event of a sensor malfunction, project staff will contact the participant to try and determine cause. Events like power-outages or internet service outages will prevent monitors from collecting or transmitting data to the map. Damage or dislocation can also create situations where data would not be collected or reported. Project staff will develop a basic troubleshooting guide for each device in lay terms and will provide walk-through assistance troubleshooting the device. If the instrument continues to error, malfunction, or otherwise not operate as expected – Center project staff will be deployed to the location of the sensor to provide on-site troubleshooting, or if it is determined that the sensor is non-operational, will utilize one of the replacement/backup sensors. Malfunctioning sensors will be sent to their respective manufacturers for warranty repair/replacement as applicable.

Hybrid/Virtual Community Engagement Protocol (abridged)

To protect the health of the community, project staff and AmeriCorps members will also maintain social distancing procedures to drop off the sensors (FLOWII) and install the sensors at residences (PurpleAir). Some aspects of this IRB approved protocol include:

- Contacting residents ahead of the site visit, providing a summary of what they can expect
 during the visit, use of a telephone consent script, and scheduling a convenient day/time for
 the site visit.
- On the day of the visit, AmeriCorps members will follow protocols to drop off FLOWII sensor in a disposable ziploc bag on the porch with a tablet and PPE and leave before contacting residents to inform them the bag has been delivered. The team member will connect to Zoom and assist the resident to conduct the instrument's activation protocol until it is successfully capturing data. Any video files/images captured will be saved to a secure cloud and the project coordinator will conduct audits, ensuring that all the protocol was completed with fidelity.
- On the day of visit, AmeriCorps members will follow protocols to install/mount the PurpleAir outdoor sensor and will direct residents to complete the process to activate via zoom and at no point will enter the residents' homes.

WAYNE STATE UNIVERSITY Professional Record

NAME: Thompson, Thomas L. (Lyke)

Office Address:

5700 Cass Avenue, Room 2207 A/AB Detroit, MI 48202 Center for Urban Studies

Office Phone:

(313) 577-5209

DEPARTMENT/COLLEGE: Department of Political Science / College of Liberal Arts

AND

Center for Urban Studies, Director / Office of the Provost and

Academic Affairs

PRESENT RANK &

DATE OF RANK: Professor, August, 2000

EDUCATION

High School: Amarillo High School, Amarillo, TX 1968

Baccalaureate - Journalism: The University of Texas, Austin, TX,

December, 1971

Graduate:

MA - Urban Studies: The University of Texas, Arlington, TX, 1978

Ph.D. - Urban Studies /

Administration: The University of Texas, Arlington, TX 1981

FACULTY APPOINTMENTS

AT OTHER INSTITUTIONS: Assistant Professor, Political Science, 1980

Western Michigan University

Associate Professor, Political Science, 1988

Western Michigan University

Research Associate, Institute of Urban Studies,

The University of Texas, 1977-80

PROFESSIONAL SOCIETY

MEMBERSHIPS: American Political Science Association

American Society of Public Administrators

Urban Affairs Association

Midwest Political Science Association

BOARD MEMBERSHIPS: CLEARCorps Detroit

Detroit Lead Partnership

PUBLIC SERVICE APPOINTMENT: Michigan Child Lead Exposure Elimination Commission (CLEEC) – through 12/15/22

I. RESEARCH

A. Research in Progress, Not Funded

"Primary Prevention of Lead Poisoning in Two Detroit Communities"

"Term Limits and Campaign Contributions in the Michigan Legislature"

"Leadership without Seniority"

"Service Cultures in Early Childhood Services"

"The Politics and Consequences of Lead Poisoning of Children"

B. Funded Research

Grants (abridged)

2022-2023

Detroit Older Adult Home Safety Assessments, 2022-2023. Michigan Health Endowment Fund, \$492,354. To assist Detroit residents 60 years and older improve their ability to safetly remain in their homes through hazard identification, Home Stability, Respiratory Health, and Slip and Fall Prevention interventions, as well as nutrition and respiratory health education. In partnership with Asthma and Allergy Foundation of America – Michigan Chapter.

2021-2022

AmeriCorps Urban Safety (AMUS) Cody Rouge High School, 2021-2023. The Skillman Foundation, \$450,000.

AmeriCorps Urban Safety (AMUS), 2021-2023. The Kresge Foundation, \$80,000

Auto Theft Prevention Project, 2021-2022. Auto Theft Prevention Authority, \$61,537.

Southwest Detroit Healthy Homes Hazard Reduction Phase 2, 2021-2021. Marathon Petroleum Foundation, \$50,000.

Damage beyond Flooding in Jefferson-Chalmers Neighborhood, 2021-2022. One Health Pilot Program, \$10,300 subaward in partnership with Dr. Judy Westrick and Lumigen Lab.

De-Lead Education & Advocacy in Detroit (DLEAD) Parent Group, 2021-2023. The Erb Foundation, \$136,000.

DLEAD Cleaning Study, 2021-2022. Fred A. and Barbara M. Erb Family Foundation, \$180,000.

Part C Qualitative Compliance Information, 2021-2022. Evaluation of Michigan's Part C Initiative. The Michigan Department of Education, \$340,076.

Citations

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COVER PAGE

Project Title: Detroit Vulnerable Community Enhanced Air Quality Network

Applicant Information:

Asthma & Allergy Foundation of America

Address: 26111 W 14 Mile Rd Ste LL1 Franklin, MI, 48025-1169 United States

DUNS number: 860965433 UEI: HFG1RUPGK919

Primary Contact: Kathleen Slonager, RN, AE-C, CCH (888) 444-0333 aafamich@sbcgloabl.net

Set-Aside: Community-based Organization

Community: The AAFA Michigan Chapter serves all Michigan residents affected by asthma and allergies. For the proposed project, the community of concern that our organization represents are those within geographic proximity to one another (Detroit, MI) that experience the common condition of respiratory distress or asthma.

Organization: Since 1984, Asthma and Allergy Foundation of America – Michigan Chapter (AAFA-MI) has been a trusted source of information, education and training with a mission to improve the quality of life for all individuals affected with asthma and allergic diseases. AAFA-MI is part of the national organization that is the oldest (1953) asthma and allergy patient group in the world.

Project Partner:

Wayne State University 5057 Woodward Avenue, STE. 13001, Detroit, MI 48202 Primary Contact: Dr. Lyke Thompson, Director; Unit: Center for Urban Studies (313) 577-5209 lyke@wayne.edu

Project Location: Detroit, Michigan

Air Pollutant Scope: Particle Pollution (PM2.5)

Budget Summary:

EPA Funding Requested	Total Project Cost
\$157,308	\$157,308

Project Period: 24 Months; projected 11/01/2022 – 10/31/2024

Short Project Description: During the 24-month project period, Asthma and Allergy Foundation of America – MI Chapter, in partnership with Wayne State University Center for Urban Studies, intend to enhance Detroit's ambient air quality network by deploying sixty-two PM2.5 sensors (31 personal indoor/outdoor sensors and 31 fixed, continuous outdoor sensors) to Detroiters ages 60 and older with respiratory distress/asthma symptoms. We will deploy one pair of sensors to a household in each of Detroit's zip code to assurer geographical representation across the city. We propose to track ambient outdoor and indoor PM2.5 data with commercially available methods, display sensors' output on web dashboards, perform analysis, and engage residents on AQ issues, impacts, and interpretation of real-time PM2.5 sensor data and trends. We will host quarterly virtual workshops to engage community members with project staff, air quality, and public health providers.

WORKPLAN

Section 1 Project Summary and Approach

A. Overall Project

Asthma and Allergy Foundation of America – Michigan Chapter (AAFA-MI) in partnership with Wayne State University Center for Urban Studies (Center) proposes the Detroit Vulnerable Community Enhanced Air Quality Network project. The objective of the project is to reduce health disparities related to PM2.5 exposure in an older adult minority population that has experienced greater COVID-19 pandemic impacts such as increased risk for COVID exposure and disease, as well as poorer health outcomes due to a complex interaction of factors related to age and race. Black people and older adults are the two groups most affected by COVID-19 morbidity and mortality (Chatters, LM et al, 2020) and are also more likely to suffer negative impacts from the loss of family, friends, and caregivers within their community social networks (Umberson, 2017).

We intend to engage and build community and network awareness of intraurban PM2.5 air quality through increased capacity and knowledge of local-scale, real-time air quality. This will be achieved through the use of both a personal sensor for the participant, and a fixed continuous AQ monitor outside their residence. These devices capture PM2.5 concentrations and produce detailed maps that visually display PM2.5 exposure concentrations and trends. This will allow for increased awareness of indoor and outdoor PM2.5 air quality, help promote community and stakeholder understanding of intraurban PM2.5 levels, and ultimately, improve health outcome disparities from air pollution and the COVID-19 pandemic.

By the completion of the proposed two-year project period, we intend to deploy sixty-two PM2.5 sensors - (31) personal indoor/outdoor sensors and (31) fixed, continuous outdoor sensors to Detroiters ages 60 and above with respiratory distress /asthma symptoms to reduce equity barriers the community faces in monitoring their own AQ. The proposed project builds upon an existing partner program between Asthma and Allergy Foundation of America - MI Chapter and Wayne State University's Center for Urban Studies. This existing partnership enables us to support additional numerous valueadded in-home AQ related strategies for reducing disparities and improving health outcomes in the targeted community beyond the requested EPA funding support that would expand the AQ sensor network. Value added services that will be provided to participants of the proposed project and are supported by the existing partner project include; provision of HEPA vacuum, air cleaner, high-MERV home air filters, green cleaning supplies, and mop/buckets, general health and wellness education, connection to community resources, case management, and 1-hour session with a qualified Asthma Educator as appropriate. We are requesting EPA support for commercially available indoor and outdoor technologies for monitoring ambient PM2.5 that will enable us to expand the partnership's capacity to provide meaningful community participation in monitoring their own AQ that we would otherwise not be able to accomplish.

Proposed Activities

Enable Communities to Monitor their own Air Quality

We seek EPA funding assistance in order to purchase two sets of sensors, one primarily for indoor air quality monitoring (the FLOW II) and one for outdoor monitoring (PurpleAir); both will provide readings of PM2.5.

PurpleAir outdoor PM2.5 sensors are a commercially available sensor utilizing an optical particle counter. Measurements of PM2.5 mass concentrations are calculated from the counts. The device has been assessed by Air Quality Sensor Performance Evaluation Center through the deployment of sensors at the South Coast AQMD Rubidoux station and ran side-by-side and captured measurements while colocated with (2) models of FEM instruments monitoring the same pollutant of concern. This field evaluation found the PurpleAir PA-II PM2.5 mass measurements correlate very well with the corresponding FEM GRIMM data for PM2.5 5-Minute and 1-hour mean (R2 > 0.93) and 24-hour mean (R2 > 0.94). Correlation to BAM FEM 1-hour mean (R2 > 0.86) and 24-hour mean (R2 > 0.92). It was also reported that the PurpleAir PA-II sensor performed well tracking day time PM2.5 variations recorded by both the FEM GRIMM and BAM instrument and had high reliability (with data recovery between 95 and 99% for all units tested) and were characterized by very low intra-model variability (AQMD, 2018).

The sensors we will primarily use for indoor monitoring are (40) Plume Lab FLOW II personal PM2.5 sensors; (31) of these sensors will be deployed to older adult residents in each of the 31 zip codes of Detroit, Highland Park, and Hamtramck -while the remaining (9) are held in reserve as backup replacement units. The FLOW II has been assessed by Air Quality Sensor Performance Evaluation Center through the deployment of sensors at the South Coast AQMD stationary ambient monitoring site and captured measurements while co-located with Federal Equivalent Method (FEM) and Federal Reference Method (FRM) instruments monitoring the same pollutant of concern. Absolute intra-model variability was ~ 0.1 ug/m3 for PM2.5. Relative intra-model variability was 3.6% for PM2.5 (AQMD, 2021). Each device has a 2-year manufacturer warranty.

Expand use of Community Monitoring Approaches that give the Community a Voice in the monitoring of their Air Quality

In addition to funding support requested to purchase PurpleAir Outdoor and FLOW II personal air sensor equipment and establish a community FLOW II dashboard, we seek EPA support of activities designed to better engage the community directly in monitoring their own air quality. This includes AmeriCorps member living allowance for engaging with participants at their home. While on site, members will engage with community member on the topic of PM2.5 and Detroit air quality. Center AmeriCorps members are recruited directly from the Detroit community to be served and are primarily young adults 18-24. They are effective community messengers and will provide in-depth explanation and demonstration of how the air sensor device is to be used, how it is not to be used, how and where measurements are collected and monitored, how to access measurements, project staff to contact with questions or concerns, and how to interpret and apply sensor measurements in their daily lives (i.e. what happens when you turn on a gas stove to cook vs. cooking with an open window or identifying city blocks with healthier air for their walks). Members will also deliver additional project specific educational materials on AQ sensor, PM2.5, AQI, and respiratory/asthma health. EPA requested assistance will also be used to support project Research Technician time to monitor PurpleAir and FLOW II data coming in from each individual monitor to dashboards, to provide additional resident technical assistance and support with the sensor as needed, to perform data analysis, and to produce reports/presentations of sensor data findings.

We intend to host interactive hybrid/virtual quarterly meetings with community participants and member organizations from our partner collaboratives below. At these workshops, community participants will have the opportunity to ask questions of project staff and other AQ experts from our collaborative

partners about indoor/outdoor PM2.5 monitoring, discuss notable observations they have made of sensor data and related activity/behavior, and will be presented with de-identified draft maps displaying monitors' data overlaid with the city. Participants will be given the opportunity to comment on the preliminary data provided by sensors, and asked to provide input on "hot-spot" trends and potential causes/solutions. We will seek their feedback and suggestions for project improvement and expansion. We hope to support the community's interest and role as citizen scientists collecting AQ data and to translate this engagement beyond the life of the project period into future actions.

Value Added Program Activities

The proposed project leverages an existing high performing partnership between AAFA-MI and the Center on the Detroit Older Adult Home Safety Assessment (HSA) project that has received philanthropic foundation support. The proposed EPA project compliments & expands on our partnership's history, existing project, and effective hybrid/virtual AQ service delivery model that was developed with support from EPA Region 5 Indoor Air Quality program (award XA- 00E0270) conducted during the pandemic in Southwest Detroit.

The following is a brief summary of additional, value-added components from our existing Detroit Older Adult HSA project, for which we are not requesting EPA funding assistance. While we are not requesting EPA funds in support of the following activities, they are notable for their ability to help support development of a relationship and trust with each resident engaged. Multiple interactions will have already occurred via phone, email, and hybrid/virtual visit before they are asked to participate with the proposed 24-month monitoring project. We are able to ask for a reduced amount of EPA fund assistance for participation support costs as our existing program's interventions also function as incentives to continued participation with the partner group for the duration of the proposed project period.

Community Participants ages 60 and older will receive:

- Home Safety Assessment (HSA) performed by trained AmeriCorps members to identify 29 inhome hazards associated with health impacts.
- Provision of evidence-based products related to needed interventions including some or all of these: deadbolt, smoke detector, HEPA vacuum, HEPA air purifier, High MERV furnace filters, shower seat, handrails, etc.), as well as, three years of replacement consumables (i.e. air cleaner filter replacement, cleaning supplies).
- Connection to other available resources that participant and/or participant household members may benefit from/be eligible for including aid application assistance for medical, food, housing benefits.
- Detailed maps/directories of locations providing fresh low-cost healthy food options including local food distribution programs, farmers markets, and grocers within close proximity to their residence.
- Asthma and Allergy Foundation of America MI Chapter (AAFA-MI) education, connection/coordination assistance with PCP, and Asthma Educator as needed.
- Ongoing follow-up by Project Coordinator to assess additional/new needs (social determinate or housing hazard).

B. Project Significance

Anthropogenic emissions contribute significantly to air pollutants such as fine particulate matter (PM2.5) and its constituents that negatively impact human health. In Detroit, air quality has improved over the last 20 years due to EPA regulations; nevertheless, poor air quality remains persistent. Research links the most prevalent pollutants in Detroit, including PM, to myriad of public health issues (McConnell, et.al., 1999, American Lung Association, 2021) including being linked with higher COVID-19 mortality rates (Nethery, et. al. 2020).

PM is known to aggravate existing cardiovascular ailments, impact breathing, and has been linked with both heart and lung disease (DeWinter, et.al, 2019; Allen, 2016). Detroit's poor outdoor air quality contributes to indoor respiratory triggers as more than 60% of indoor air originates from outdoor sources. Additionally, indoor PM2.5 impacts on air quality can be made worse by indoor hazards such as gas stoves, smoke generating activities, and lack of air filtration.

The city of Detroit's aging housing stock has been demonstrated to precipitate hazardous conditions within the home that have negative impacts on human health. The most prominent and dangerous hazards these homes present are poor indoor air quality and built environment hazards. Not only are these hazards rampant in Detroit homes, but they poise significant risks to older adults.

The proposed project's primary geographic focus are neighborhoods of Detroit, MI. This includes, for example, zip code 48217. According to American Community Survey (ACS Census) data, the estimated population in 48217 is 7,124, with 18% of the population over the age of 65. By race, Black or African American and Hispanics comprise approximately 95% of the 48217 community (81.7% and 12.8%, respectively). This same data revealed that 26.1% of the area's adults age 18 and over lacked a high school diploma or its equivalency, and that 51.5% of children between 5 and 17 years old lived below poverty. Family income levels are half the median household income for families in Michigan at-large. This zip code is representative of the community through-out Detroit.

The COVID-19 pandemic put a spotlight on racism and ageism, and how they interact to result in higher risks for coronavirus exposure, COVID-19 disease, and poor health outcomes for older Black adults. Black people and older adults are the two groups most affected by COVID-19 morbidity and mortality (Chatters, LM et al, 2020) Black adults and their families experience of higher COVID-19 mortality rates impacted social networks, family structure and size, living conditions, family roles and responsibilities, worsened economic conditions, increased food insecurity, and decreased already limited access to medical and social resources. These combined factors will likely have long term generational impacts for older Black adults and their families not experienced by their White peers (Umberson, 2017). African-American communities in the state of Michigan have been disproportionately impacted by the COVID-19 pandemic. African-Americans represent 14% of the population of Michigan yet account for 40% of pandemic related-deaths (Michigan Department of Health and Human Services, 2020). In Michigan's primarily African-American communities, more than 10% of COVID-19 cases end in death (Michigan Department of Health and Human Services, April 2020). While it was originally thought that COVID-19 would primarily impact older adults and the chronically infirmed, it has now been shown to particularly devastate African-American communities like Detroit in the U.S. (Sneed, 2020).

Section 2 Community Involvement

A. Community Partnerships

Our project partnership includes Asthma and Allergy Foundation of America – MI Chapter (AAFA-MI) and Wayne State University's Center for Urban Studies. Our organizations have worked together to address intersectional air quality and public health impacts within the Detroit community for over 10 years. Our organizations are currently operating in formal partnership on the Detroit Older Adult Home Safety Assessment project previously detailed. Each partner group holds expertise in community engagement and within their respective, complimentary fields of community asthma and respiratory health and environmental pollutant hazard detection and monitoring.

Asthma and Allergy Foundation of America – Michigan Chapter

Since 1984, AAFA-MI has been a trusted source of information, education and training with a mission to improve the quality of life for all individuals affected with asthma and allergic diseases. AAFA-MI is part of the national organization that is the oldest (1953) asthma and allergy patient group in the world and relies on health care professionals and business leaders from a variety of specialties and industries to guide their mission as members of the Board of Directors, Medical Scientific Council, and staff. AAFA-MI is the community-based organization seeking EPA assistance and will perform all duties and responsibilities required of the applicant organization including but not limited to, maintaining oversight of project objectives, budget, sub-award, and reporting. Executive Director Kathleen Slonager will work in partnership with Dr. Lyke Thompson and Center for Urban Studies program staff to ensure fidelity to project aims, budgets, outputs/products, and to coordinate and host community workshops.

As part of our existing Detroit Older Adult HSA partner project, AAFA-MI also performs activities that provide education and supports to participant older adults that present with asthma (diagnosed or presenting symptoms) for preventive healthcare, including providing:

- asthma and allergy education for reducing environmental triggers,
- resources to connect older adults with their care provider,
- consulting and collaboration on asthma & allergy messaging content, and
- dissemination of study findings to AAFA-MI partner network.

Wayne State University Center for Urban Studies

The mission of the Center for Urban Studies (Center) at Wayne State University is to improve the understanding of, and provide innovative responses to, urban challenges and opportunities.

The proposed project will support partners' additional capacity to serve and integrate the use of environmental data to build awareness of PM2.5 and promote change in health outcome disparities experienced by our vulnerable community of concern.

B. Community Engagement

Project staff will recruit participants for the proposed project from the existing Center database and other sources, prioritizing those 60 and older, with previous reports of respiratory/pulmonary cardiovascular issues, and those with allergies/asthma/chronic respiratory diseases (diagnosed or reporting symptoms). The Center has performed substantial community engagement activities to solicit community involvement, working within the geographic boundary of Detroit, Center staff and AmeriCorps members conducted door canvassing activities in neighborhoods with poor outdoor air quality. From these engagements we then performed over 5,739 Home Safety Assessments (HSA) to date and learned that over 36% of these homes include households where it is reported that an individual 'over the age of 60 lives in the home' and an additional 3% of households where it is reported an individual is 'over the age of 65'. Of these prior HSA respondents, 31.9% report presence of a 'breathing problem', of which 24.6% have 'been told by a doctor or other medical professional that they have asthma'. Taken together,

this provides an initial project recruitment pool of over 1,600 residences within the targeted vulnerable population, within geographic proximity to one another that experience a common condition. This is our proposed project's community of concern that will be involved as citizen scientists as we expand the AQ sensor network. Our engagement strategy is detailed above under Proposed Activities and includes activities designed to actively engaged the community through the life of the project period, to assist the community as they collect PM2.5 data, and promote use of real-time AQ data.

AAFA-MI and the Center are members of the Asthma Collaborative of Detroit. This collaborative was formed in 2016 in response to the Michigan Department of Health and Human Services (MDHHS) report entitled, Detroit: Current Status of the Asthma Burden 2016, which reported that the asthma burden in Detroit was greater than the overall burden in the state of Michigan (DeGuire, et al., 2016). This finding has not changed and was again reported in the 2021 Asthma Burden update (Kunyangna, 2021). Since 2016, this collaborative, focused on the state of asthma in Detroit, is comprised of organizations from Detroit, including; City of Detroit, local community organizations, citizens, and university partners. It also includes Michigan Department of Health and Human Services, Michigan Department of Environment, Great Lakes, and Energy and U.S. Environmental Protection Agency Region 5. It provides opportunities for education, collaboration, and identification of strategies to reduce disparities and improve asthma outcomes. The audience includes public health departments, environmental organizations, community health organizations, community advocates, health care professionals, housing specialists, school staff, policy makers, and citizens. We utilize the collective and/or specific expertise of this collaborative and members while planning and implementing projects such as this one that address public health disparities in minority vulnerable populations.

The Center also participates as a member of the Air Quality Sensor Learning Collaborative launched in 2016 with support from the Detroit Health Department and the Skillman Foundation for efforts focused on pediatric asthma in Southwest Detroit. This Collaborative grew out of the learning acquired by city departments, local nonprofits, and community organizations on low-cost air quality sensor technology to address the lack of localized air quality data. The Collaborative participants include members of the Center for Urban Studies, City of Detroit departments, community organizations, and regulatory representatives from the State of Michigan Environment, Great Lakes and Energy (EGLE) and Environmental Protection Agency (EPA) Region 5. The diversity of this collaborative has allowed for improved cross-sector and multi-level information and resource sharing. We consulted with collaborative convening member organization Ecology Center in the development of the proposed project. The Ecology Center has several Plume lab FLOW II sensors already in use within the community and we discussed installations, user-friendliness, dashboard setup, success, challenges, and how organizations could coordinate with one another on greatest area(s) in need of AQ monitoring expansion.

We intend to present ongoing project updates and project outcomes and challenges to partners within these networks, to promote publicly accessible PurpleAir data, and share FLOWII PM2.5 measurements and trends with these and other community leaders.

B. Community-Based Organization Set-Aside

AAFA-MI has strong ties to the community we represent. During 2021, we connected with over 3,000 individuals through our involvement with virtual events and workshops, media appearances, workplace programs, lectures, and phone & website interactions. Over 325 Doctors, Nurses, Respiratory Therapists, and other professionals were educated and trained through our professional development medical educational programs & consulting work. On behalf of our community, we had thoughtful

conversations regarding asthma, allergies, air quality and renewable energy with over 20 state and federal Legislators and their staff, and we engaged in training and consulting services with over 400 individuals and organizations across Michigan. We work to meet people where they are and to reduce common barriers that Detroiters experience to receiving health care services. We believe the proposed project is responsive to community need and their expressed desire to learn more about AQ impacts on their health, including what the AQ is of their localized environment and simple interventions (product & behavioral) that can improve their health respiratory and pulmonary cardiovascular health by reducing PM2.5 ambient air pollutant exposure.

Section 3 Environmental Justice and Underserved Communities

The community to be engaged in this project, minority Detroiter's ages 60 and older with respiratory distress/asthma symptoms, face considerable inequities related to environmental PM2.5 exposure, COVID-19, and respiratory health outcomes. AAFA's 2020 report entitled, *Asthma Disparities in America* (Asthma and Allergy Foundation of America, 2020), outlines numerous associations between low income peoples of color and asthma outcomes, including:

- Black individuals are about three times as likely to die from asthma than Hispanic or white individuals (based on estimated rates of 22.3, 8.4, and 7.4 deaths per million for age-adjusted Black, Hispanic, and white populations, respectively)
- Black females have the highest rate of fatality due to asthma (23.5 deaths per million). This rate is nearly four times the asthma-related death rate among white males (5.9 deaths per million)
- Asthma-related ED visits are nearly five times as high for Black patients compared to white patients.

People of color are far more burdened by poor air quality on their quality of life compared to neighbors in surrounding communities. The State of Michigan has gone so far as to call Detroit the "Epicenter" of respiratory distress symptoms, with at least 11.3% of Detroit children and 15.5% of Detroit adults having a relevant medical diagnosis (Michigan Department of Health and Human Services, 2016).

The proposed project seeks to reduce air pollution and reduce risk in a community of environmental justice concern. The majority of Detroit has been identified by the EPA Environmental Justice Screening and Mapping Tool (EJScreener, 2022) as being in the 80th -100th percentile for the nation on the EJ Index measuring for PM2.5.

The proposed project is in alignment with The American Rescue Plan Act of 2021 (P.L. 117-2) for its intent to address health outcome disparities from pollution and the COVID-19 pandemic. The proposed project is also designed to monitor air pollutants of greatest concern in communities with disproportionate and adverse health outcomes and is consistent with statutory authority provided by the Clean Air Act, §103(b)(3) (U.S. Code, 2013), which authorizes requested funds for these purposes.

The proposed project supports FY 2018-2022 U.S. EPA Strategic Plan Objective 1.1 Improve Air Quality, Strategic Measure: Sustainable and Healthy Communities, by reducing the impact of pollution directly in environmental justice communities. It also supports the Strategic Plan's Human Health Risk Assessment Strategic Measure to assess the impact of pollution (EPA, 2018) and the EPA's Coordinated Federal Action Plan to Reduce Racial and Ethnic Asthma Disparities (EPA, 2012) through its foci on reducing environmental pollutant exposure in an underserved minority community.

This study additionally supports the City of Detroit Sustainability Action Plan, "Goal #6: Expand local air quality monitoring system." (City of Detroit, 2019). Through this proposed project, 62 additional

community-based air quality sensors will provide real-time intraurban PM2.5 data. This network would be established in alignment with the 2017 Community Action to Promote Healthy Environments Plan (CAPHE-Detroit) developed by the University of Michigan, for its' engagement and education of participants about the nature of PM2.5 emissions and strategies to reduce exposure (CAPHE, 2017). Educational material will include content on air pollution, sources, public health impacts, individual actions to reduce exposure, and ways to connect to advocacy efforts. It also supports CAPHE recommendations for air quality monitoring that could include community input on identifying areas of concern for additional monitoring.

Section 4 Environmental Results

A. Expected Project Outputs and Outcomes

PurpleAir outdoor sensors will transmit real-time data including PM2.5, temperature, relative humidity and dew point, directly to the PurpleAir map (PurpleAir, 2022), where it is stored and made available to any smart device or computer. The map displays PM2.5 and other data visually with each sensor appearing as a color coded dot with a number displayed, upon selecting the monitor from the map, the level of AQI concern is stated; ranging from green "0-50: air quality is satisfactory, and air pollution poses little or no risk with 24 hours of exposure", to dark burgundy, ">300: Health warning of emergency conditions: everyone is more likely to be affected with 24 hours of exposure". Data is also displayed graphically and outputs can be displayed in 10-min., 30-min., 1-hr, 6-hr, 1-day, and 1-week formats that are publicly accessible 24/7. Data will also be transmitted to project staff and will be used for additional data analysis, comparisons and correlations between indoor and outdoor data, and in the development of de-identified products.

In addition, participants will receive real-time LED display feedback from their personal FLOWII. There is the additional benefit that for those who use the FLOWII during walks or other travel, the sensors' phone app provides detailed maps of their exposure, and suggestions for alternative routes with healthier air quality. Project partners would also develop a centralized online dashboard where data will stream in from each of the devices, enabling project partners to build de-identified products to share broadly with the community and stakeholders to increase capacity of the network to monitor their own air quality and identify hot spots of intraurban PM2.5 pollutant concern. Residents will be asked to consent to data collection and related project activities. In order to maintain trust and promote wideranging use of the sensor as the resident travels their home and neighborhood, we will slightly 'fuzz' the geolocation of this data on any products shared beyond project staff so as not to reveal exact locations/movements. Data will also be monitored by project staff, and we would develop a system for sending a text alert when Air Quality Index (AQI) indicators get above a specific level that would likely have a greater negative impact on vulnerable populations. We would also seek to develop an 'all clear' alert when AQI returns below the caution/hazard level. We will seek community participant input and feedback on the nature and frequency of these alerts.

We intend to compare the outdoor (Purple Air) and the indoor air quality (Flow II) PM2.5 data. When are they similar? When are they different? After outdoor air quality declines, how quickly does the indoor air quality indicator rise? Through the use of the two sensor models, we intend to identify the extent to which higher levels of outdoor PM2.5 translate to higher concentrations of PM2.5 within the home, and how quickly that process happens. We would also look for correlations of association

between this outdoor/indoor pollutant exchange and age of the physical residence or other indicators of deteriorated housing (broken windows, holes in roof, etc.)

The Center will utilize AmeriCorps members to support initial setup and ongoing technical assistance of ambient air quality sensor sampling to be performed by the project's community participants. We have used AmeriCorps members in this work successfully in several other projects. Once participants have been selected, Center project staff will engage residents through a contactless virtual home visit that includes: Verbal Consent Script; tablet/zoom protocol with PPE and ambulatory safety measures so that live instruction can safely occur; Phone Script for providing education/instruction on the sensor and its use and data collection. These products ensure ongoing transparency and continuous bidirectional communication - essential elements for fostering an equitable and mutually beneficial partnership within the community. Our Virtual protocol has received IRB approval and has been used effectively during the COVID-19 pandemic to engage Detroit residents in citizen science data collection activities, including the EPA supported Indoor Air Quality in Southwest Detroit project. We anticipate modification of the protocol for project specific use and do not anticipate challenges in obtaining IRB approval. If COVID-19 hazards subside sufficiently, we will shift to a face-to-face visit inside the home.

Outputs:

- Identification of PM2.5 pollutants
- (31) Community members ages 60 and older engaged as Citizen Scientists
- Deployment of (31) PurpleAir Outdoor PM2.5 Monitors in each of the 31 zip codes of Detroit, Highland Park, and Hamtramck
- Near real-time PM2.5 data available on PurpleAir publicly accessible map
- Deployment of (31) FLOWII personal/indoor PM2.5 Monitors in each of the 31 zip codes of Detroit, Highland Park, and Hamtramck
- FLOWII Dashboard data interface developed
- Progress reports and a final report

Outcomes:

- Short Term
 - o Problem identification of intraurban PM2.5 pollutants
 - o Increased community awareness of PM2.5 and AQI
 - o Increased access to tools and information that improve the community's ability to monitor their own AO
 - o Increased access to tools and information that improve understanding of PM2.5 sources, interventions, and associated health risks
 - o Individual action to mitigate PM2.5
- Intermediate
 - o Community action to mitigate PM2.5
- Long-term
 - o Reduction of human exposure to PM2.5

B. Performance Measures and Plan

AAFA-MI will provide oversight of the subaward to the Center and will also track and report on all project progress and expenses, as well as, tracking outputs from Center provided reports. The Center has established mechanisms to effectively track project outputs including an HSA database. Project partners

will establish a regularly occurring meeting through-out the life of the project period to monitor progress and identify/address challenges that may impede obtaining project objectives.

C. Timeline and Milestones

We propose a 24-month project beginning November 2022. During the first project quarter we would purchase AQ sensor equipment, develop the FLOWII dashboard, develop text alert system, and begin deploying both PurpleAir and FLOWII to the community upon arrival. We intend to have all sensors reporting data to their respective maps by the end of year one. During year two we will continue to monitor data, replace equipment as needed, and engage the community through text-alerts and promotion of detailed PM2.5 data and maps on the respective PurpleAir and FLOWII sites. We will host quarterly community virtual workshops for the duration of the project period. Progress and final reports will be delivered per required schedule.

Section 5 Quality Assurance Statement Please see attached

Section 6 – Programmatic Capability and Past Performance

A. Past Performance and B. Reporting Requirements – AAFA-MI does not have any relevant/past performance with federally funded assistance. Project partner Dr. Thompson has a proven track record of overseeing the effective implementation of HUD, EPA, CDC, State of Michigan, and private foundation environmental health grant research initiatives.

C. Staff Expertise

AAFA-Michigan Chapter Executive Director Kathleen Slonager, RN, AE-C, CCH has over 25 years' experience in the health care industry as an administrator, leader and practitioner. She is a Registered Nurse, Certified Asthma Educator, as well as a nationally certified Classical Homeopath. She is a passionate patient advocate and health educator with expertise in disease management & wellness programs, quality assurance, policy & procedure development, and complementary and alternative medicine modalities.

Dr. Lyke Thompson has served as the Director of the Center for Urban Studies at Wayne State University in Detroit since 2003 and has been a leading researcher in urban policy and environmental health for more than 30 years. His special research interests include household hazards to human health, specifically, childhood lead poisoning, structural safety, flooding, air quality, and asthma. Dr. Thompson will provide project and budgetary oversight for Center project staff, and will work in partnership with Ms. Slonager to ensure project plan adherence, oversee data collection and analysis, provide web Dashboard oversight, assistance coordinating and hosting community workshops, and reporting/dissemination of project data, products, and reports.

The Center has obtained extensive experience working in Detroit and maintains a successful record of engaging community members in meaningful ways on different initiatives to positively impact neighborhood conditions and health outcomes. Notable projects in the target area include:

• Detroit Indoor Air Quality study supported by the Environmental Protection Agency (since 2019) to conduct indoor monitoring of volatile organic compounds, and to provide asthma partner referrals and asthma-trigger reduction products/education to reduce respiratory distress in the home; and

• Southwest Detroit Healthy Homes Indoor Hazard Reduction Project, supported by Marathon Petroleum Foundation (since 2020) to address indoor air quality concerns/respiratory triggers with in-home respiratory support products and education similar to those proposed for older adults as part of this project.

Section 7 – Budget

Line Item & Itemized Cost	EPA Funding
Personnel	
Project Director Base Salary \$100,000 at 16.5% FTE YR1 & 20% FTE YR2 with 2%	
COLA increase applied in YR2	\$36,900
$(\$100,000 \times 16.5\%) + ((\$100,000 \times 1.02) \times 20\%)$	
TOTAL PERSONNEL	\$36,900
Fringe Benefits	
Project Director fringe benefits at 1%	\$369
(\$36,900 x 1%)	
TOTAL FRINGE BENEFITS	\$369
Travel	
Local project mileage (ave. RT 40 miles) x 31 homes x \$0.585 FY22 federal mileage rate	\$725
(40 x 31) x \$0.585	
TOTAL TRAVEL	\$725
Equipment	
TOTAL EQUIPMENT	\$0
Supplies	
TOTAL SUPPLES	\$0
Contractual	
TOTAL CONTRACTUAL	
Other	
Subaward Costs - Center for Urban Studies. Personnel: \$48,990; Fringe: \$7,644; Travel:	
\$725; Supplies: \$25,772; Indirect Costs 26% NIDC predetermined off campus rate:	
\$21,614	\$104,745
Participant Support Costs Participant incentive (gift card) \$25 each + \$3.95 gift card fee (31	
participants x 6 incentives/year)	\$10,769
TOTAL OTHER	\$115,514
Total Direct Charges	\$153,509
Indirect Charges	
MTDC Subtotal (less subawards & participant support costs): \$37,994 x 10% de minimis	
indirect cost rate authorized in 2 CFR 200.414(f)	\$3,799
TOTAL INDIRECT	\$3,799
TOTAL FUNDING	\$157,308
TOTAL PROJECT COST	\$157,308

AAFA-MI's Ms. Sloanger will oversee procedures and controls for ensuring that awarded grant funds are expended in a timely and efficient manner.

SF-424

Areas Affected by Project

Primary –

City of Detroit, Wayne County, Michigan

City of Highland Park, Wayne County, Michigan

City of Hamtramck, Wayne County, Michigan

Secondary –

Wayne County, Michigan

EPA-OAR-OAQPS-22-01 - Asthma and Allergy Foundation of America – MI Chapter

SF-424

Project Congressional Districts

MI-13

MI-14

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Manifest for Grant Application # GRANT13580059

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 25842 bytes)
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- Forms Included in Zip File(total 6):
- 1. Form ProjectNarrativeAttachments 1 2-V1.2.pdf (size 16021 bytes)
- 2. Form SF424 3 0-V3.0.pdf (size 24183 bytes)
- 3. Form SF424A-V1.0.pdf (size 22829 bytes)
- 4. Form EPA4700 4 3 0-V3.0.pdf (size 22665 bytes)
- 5. Form OtherNarrativeAttachments 1 2-V1.2.pdf (size 15915 bytes)
- 6. Form EPA KeyContacts 2 0-V2.0.pdf (size 37216 bytes)

Attachments Included in Zip File (total 10):

- 1. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1235-IRS Letter of Determination.pdf application/pdf (size 470361 bytes)
- 2. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1236-Community Based Org Annual Report AAFA MI 2021.pdf application/pdf (size 381555 bytes)
- 3. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1239-Resume_KSlonager AAFA-MI_abridged.pdf application/pdf (size 102503 bytes)
- 4. SF424_3_0 SF424_3_0-1240-AAFA MI Enhanced AQ Areas Served.pdf application/pdf (size 79948 bytes)
- 5. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1237-AAFA-MI Enhanced AQ Partner Letter.pdf application/pdf (size 117904 bytes)
- 6. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1238-VITA Thompson abridged.pdf application/pdf (size 65998 bytes)
- 7. SF424_3_0 SF424_3_0-1241-AAFA MI Enhanced AQ Congressional Districts.pdf application/pdf (size 50661 bytes)
- 8. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1243-Citation List.pdf application/pdf (size 107607 bytes)
- 9. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1234-AAFA-MI Enhanced AQ Quality Assurance Statement.pdf application/pdf (size 103608 bytes)
- 10. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1242-AAFA MI Enhanced AQ Project Narrative.pdf application/pdf (size 300111 bytes)